



ENGINEERING DEPARTMENT
COURSE DESCRIPTION
ARCHITECTURAL ENGINEERING PROGRAM (DIPLOMA SECOND YEAR LEVEL)

Course Code	Course Title and Description	Credit Hours	Contact Hours
CECE 2110N	Applied Mechanics C: The course provides a thorough understanding of the basic principles of the equilibrium of rigid bodies and its importance for the design and analysis of structures. Also a basic understanding of the structural responses of various simple structures subjected to static loads including trusses, frames, machines and beams. Provides an understanding of the internal forces in statically loaded simple structures and their relevance to the integrity and soundness of such structures. Assist students in understanding the principles of motion of particles and bodies. Train students to identify, formulate, and solve models in engineering design. Help students understand the importance of verification and validation of engineering computations through simple analytical models.	3	4
ARCH 1220	Architectural Design 1: The course introduces the student to a rich design vocabulary and to provide him/her with an understanding of space, systems of order, and graphic-communication skills of the design professions. The course enables the student to understand the basic principles and elements of design, learn various drawing and rendering skills. They are also acquainted with the skill of Model making using various materials .They are taught to understand Building Programme and to prepare a full design project having single space and single use through requires presentation drawings as well as a model for the same.	3	5
ARCH 2121	Architectural Design 2: The course introduces the student to the principles of proportion and scale and to basic structural theories. Introduce the student to fundamental design skills and formal ordering systems in architecture. Introduce the student to the theories of human behavior and human scale in design. Explore the relationship between interior and exterior space. Understand the basic structural principles. Communicate ideas.	3	5
ARCH 2130	Architecture & Society: The course aims to explore the relationship between architecture and architectural design and society and how they are influenced by each other. The course enables the student to establish a perspective of the role and influence of architecture in society and vis-à-vis other disciplines in the arts and science, develop an understanding of how architecture is shaped by and reflects cultural values and social organization , present a broad picture of local and global issues and factors, which influence architectural design. It helps them to begin an acquaintance with the history and development of architecture.	3	4
CELS 2100	Engineering Surveying: The course provides the students with basic principles of Surveying. It enables the students to apply the knowledge and understanding in real practice. They are made to carry basic surveys, use various surveying instruments, observe and record the angles and linear measurements as well as produce a plan for fieldwork. They gain an experience of working in a Team.	3	4



ARCH 2120	Materials and Methods of Construction: The course provides the student with the knowledge of on various systems and components of a building and the materials and its application used for the same. They students learn to handle different construction materials and techniques. They bare made able to identify building standards and codes. The students also perform experiments on materials and work in the team collaboratively.	3	4
CECE 2220	Theory of Structure 1: The course provides the student with the basis for structural analysis to enable him/her to: Identify, formulate and solve appropriate models to analyze the behavior of structures, Apply the moment and area methods, virtual work method, plane and space frame method, and deflection of plan frame method to analyze the behavior of determinate structures and Apply the slope deflection method and moment distribution method to analyze the behavior of indeterminate structures	3	4
ARCH 2100	Visual Communication 1: The course enables the student to be acquainted with the drawing elements and techniques. They are taught to draw freehand drawings which express their imagination and perception. They are also able to draw Paraline and Orthographic drawings. The course gives a special emphasis on Rendering techniques using different media of colors.	3	5
ARCH 1211	Visual Communication 2: The course enables the students to be acquainted with the process of drawing using the graphic vocabulary. They are taught to prepare measured drawings, Perspectives of various types and also the Sciography for various building elements. The course also puts emphasis on rendering with Pen and Ink.	3	5
ENG 2100	Technical Communication: This course will introduce the student to the theories, principles, and processes of effective written communication in the technical disciplines with attention to the major strategies for composing technical discourse; techniques for analyzing audiences and writing situations, and for organizing data and information. The course enables the student to understand the effects of audience on writing styles, to produce short- and long-term writing projects, to gain practice working with various writing technologies and electronic genres, to understand problems in organizations; design and implement appropriate research strategies; and evaluate sources, to work in a team, to develop effective style and tone and follow and adjust business and technical writing conventions, to produce visually effective documents and be ethical and responsible within the business organization and as a member of society.	3	4
PHIL 3108	Business Ethics: This course equips the students with the highest ethical standards that will guide them through real life dilemmas. The students are made able to define the concept and development of values. They are taught to understand the effects of religion and society on values and the effect of Islamic and Omani values on work ethics. It helps them to learn to work with people from different cultures by developing the understanding for ethnic and cultural diversity around the world.	3	4
ARCH 2110	Architectural Workshop: The course introduces the student to Develop basic understanding and skills of using carpentry tools and model making by using various materials like paper, timber, mount board. They are taught to prepare space frame models as well as models displaying surface textures. This course also enables them to learn Block models with additional features	3	5



	on site for Campus, Housing projects etc and also the detail model for Architectural buildings like Residences, bank, bus shelter etc They are taught to work as an individual and as a team member in the production of work, Develop an understanding of reading 2D and 3D drawings to produce a 3D item and Develop an understanding of craft skills.		
PHIL 2200	Formal Logic: To develop the student's ability to think and function effectively, logically and analytically, effectively using oral and written communication. The students should be able to Function rationally and analytically. Apply logic and analytic skills in a work environment. Function independently and in a team environment. Identify and solve problems logically. Apply analytical skills in problem solving. Apply oral and written communication skills argumentatively with logic. Deal with people rationally. Function creatively in a work environment. Apply communication skills effectively. Present a reasoned argument. Present written and oral communication effectively.	3	3
CERE 2201	Renewable Energy in Construction: The course enables the student to understand the existing sources of energy, their use for human consumption and future repercussions, concept of renewable energy and its importance for built environment in Oman, sources of renewable energy to be used in buildings their relevance and adoptability for buildings in Oman, installation operation and maintenance of sources of renewable energy in the design of buildings in Oman, and acquire basic knowledge about energy efficient buildings and ecological building design.	3	4



ENGINEERING DEPARTMENT
COURSE DESCRIPTION
ARCHITECTURAL ENGINEERING PROGRAM (ADVANCED DIPLOMA LEVEL)

Course Code	Course Title and Description	Credit Hours	Contact Hours
ARCH 3110N	<u>Architectural Design 3</u> The course introduces the student to issues involving the analysis of physical site as well as the socio-cultural context of design. They are expected to prepare Site Analysis Drawings in detail. This subject gives them the phase wise preparation of Design Project from Concept stage till Final drawings. Including Precedents and formal ordering systems in the design process are essential the project for design will include a multi-space single use activity like Departmental Store, Library etc.. The students prepare the full set of drawings as well as a model.	4	6
ARCH 2223	<u>Architectural Design 4</u> The course provides the student with the ability to prepare a concept based Design integrating site analysis, study of socio-cultural conditions, various materials and structural systems. The course enables the student to prepare the presentation drawings by exploring the principles of materials, assemblies and building envelope systems. They are given the project for Multi –use, large span and non-masonry building types like College, Auditorium, Campus Design, and Resorts etc. The students prepare the full set of drawings as well as a model.	4	6
ARCH 3224	<u>Architectural Design 5</u> The course aims to deepen the student’s understanding of housing and related components including its repetitive spatial and structural elements, circulation and contextual considerations. The students will be able to programs for housing including site documentation, zoning regulations, material study and details of construction. The students are asked to prepare a full set of presentation drawings along with a model for small complexes with multi planning circulations and various built forms like Apartments, housing for Senior citizens etc.	4	6
CECE 2340	<u>Design of Structure 1:</u> The course enables the student to establish design loads, understand the design code used for designing structures. Discuss the use of basic approaches and more unique methods to analyze structures by hand. Understand the design of components and complete structures from initial conceptual design to the final design. Identify the responsibility of the engineer to be ethical in dealing with others and in the presentation of results of analysis and design.	3	4
ARCH 3270	<u>Environmental Control in Buildings 1</u> The course introduces the student to basic theory and concepts of mechanical, thermal, fire protection and acoustical systems as they pertain to the construction of residential and commercial building. The student will be able to: Understand the principles of environmental systems in residential, commercial and public buildings. Be familiar with codes and how they can be complied with. Be acquainted with cost estimating. Be acquainted with the integration of the different environmental systems like heating, cooling and lighting in a building.	3	3
PHIL 3200	<u>Formal Arabic Communication</u> The course enables the student to function logically by developing the skills of writing and speaking in Formal Arabic. They are acquainted with logical and analytical skills of problem solving and to work independently or in teams.. They acquire the skills for performing different types of presentations suited to different audiences and purposes	3	4



ARCH 1230	<u>History of Architecture 1</u> The course enables the student to: Describe the traditions of architecture; landscape and urban design prevailing during the period from prehistory to mid-16th century. They are enabled to identify and define the climatic, technological, socio-economic and cultural factors that have influenced them. They are asked to produce written reports for the Architectural characters and the influencing factors which demonstrate their critical thinking, research, and writing skills.	3	4
ARCH 3231	<u>History of Architecture 2</u> The course enables the student to: Describe the traditions of architecture, landscape and urban design prevailing during the period from Renaissance to mid-19th century. They are enabled to identify and define the climatic, technological, socio-economic and cultural factors that have influenced them. They are asked to produce written reports for the Architectural characters and the influencing factors which demonstrate their critical thinking, research, and writing skills.	3	3
ARCH 3151	<u>Materials and Methods of Construction 2</u> The course provides the student with an understanding of materials used in institutional, residential, multi-residential and office buildings, how materials are installed and inspected and the integration of building technologies and assemblies to architectural design. The student will be able to: Describe envelope systems and their uses, identify and describe some building materials and assemblies and their uses, identify and describe the legal codes, standards, and legal responsibilities and also how the compliance with a code is achieved. They are taught to describe technical documentation as it applies to building construction and assemblies. The students are made to work collaboratively by participating in a design team.	3	4
PHIL 4100	<u>Oman Civilization</u> The course enables the student to understand the geography of Oman and its civilization during pre- and post-Islam eras. They are also enabled to understand Islamic civilization, its development, and it's supporting factors. They are well acquainted with the Islamic judicial system during the different post-Islam eras.	3	4
ENGL 3100	<u>Public Speaking</u> The course enables the student to: Understand the basic principles of public speaking, acquire the skills for performing different types of presentations suited to different audiences and purposes. They are made to understand the principles of informative and persuasive speaking and be acquainted with the analysis of speeches. They are observed, analyzed, criticized, and given feedback on developing speech forms. They are enabled to perform an introductory speech, a demonstration speech, an informative speech, a persuasive speech, and a special occasion speech. They are also introduced to personal speaking styles to business, government and Industry functions.	3	4
CECE 4230	<u>Pollution and Environmental Control:</u> This course helps to attain the knowledge of various sources of pollution and its reduction techniques to establish a clean environment. The students are enabled to understand the sources, adverse effects related to air pollution. It also enables them to understand air quality standards, and concept of meteorology. The students also learn the sources of pollution and its reduction techniques. They are acquainted with pollution control equipment.	3	3
ARCH 3200	<u>Architectural Drawing:</u> Use Architectural lettering, symbols and dimensioning in producing architectural working drawings. Produce architectural working drawings including structural, Plumbing and Drainage, Electrical, Telecommunication and Fire protection service layout for a building manually as well with AutoCAD	3	5